



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,343	02/05/2002	George P. Vella-Coleiro	1052.001	7673
22186	7590	07/24/2006		EXAMINER
				KUMAR, PANKAJ
			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 07/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/068,343	VELLA-COLEIRO, GEORGE P.	
	Examiner	Art Unit	
	Pankaj Kumar	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 08 May 2006.  
 2a) This action is FINAL. 2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-29 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 26-29 is/are allowed.  
 6) Claim(s) 1,7,8,15,21,22 and 25 is/are rejected.  
 7) Claim(s) 2-6,9-14,16-20,23 and 24 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. After further consideration, a new ground of rejection has been made and accordingly applicant's arguments with respect to the claims are moot in view of the new ground(s) of rejection.

### ***Response to Amendment***

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 7, 8, 15, 21, 22, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu USPN 6,794,936 in view of Strait USPN 6,438,186. Here is how the references teach the claims:

4. As per claims 1, 15, 25: (a) receiving an input signal (Hsu figs. 1, 2: Un; input into 14, 62); and (b) applying frequency-dependent phase pre-distortion to the input signal to generate a pre-distorted output signal (Hsu figs. 1, 2: 14, 62, 82; DETX6 col. 5 lines 20-23: “~~The equalizer 82 adjusts the amplitude and/or phase over frequency of the predistorted signal~~”: adjustment of phase of predistortion based on frequency), wherein the frequency dependent phase pre-distortion (Hsu fig. 2: 62, 82; DETX6 col. 5 lines 20-23: “~~The equalizer 82 adjusts the amplitude and/or phase over frequency of the predistorted signal~~”: adjustment of phase of predistortion based on frequency) is based on at least one corresponding phase difference between at least one

pair of critical frequencies (not in Hsu but would be obvious as explained below), such that, when the pre-distorted output signal is applied to an amplifier to generate the amplified signal (Hsu fig. 2: 66), the frequency-dependent phase pre-distortion reduces spurious emissions in the amplified signal (Hsu col. 5 lines 20-30).

5. Hsu does not teach one corresponding phase difference between at least one pair of critical frequencies. Strait teaches one corresponding phase difference between at least one pair of critical frequencies (Strait col. 4 lines 30-32: “phase difference between the frequencies f1 and f2”; col. 4 lines 51-53: phase difference between 2 adjacent carriers; col. 4 lines 1-2: carriers are at frequencies). It would have been obvious to combine since Hsu teaches distortion (something broad) in general while Strait teaches the beneficial use of phase difference between frequencies in the area of distortion such as phase distortion associated with modulation of data onto a carrier (Strait col. 2 lines 57-58) having different phases at different frequencies (Strait cols. 2-5).

6. As per claims 7, 21, Hsu teaches baseband (Hsu fig. 1).
7. As per claims 8, 22, Hsu teaches RF (Hsu col. 2 line 46).

#### ***Allowable Subject Matter***

8. Claims 2-6, 9-14, 16-20, 23-24 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. Claims 26, 28 are allowed. See prior action(s) for details.
10. Claims 27, 29 are allowed because the art of record does not suggest the respective claim combinations together and nor would the respective claim combinations be obvious with part d.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pankaj Kumar whose telephone number is (571) 272-3011. The examiner can normally be reached on Mon, Tues, Thurs and Fri after 8AM to after 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Pankaj Kumar  
Primary Examiner  
Art Unit 2611

PK